

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application:

LISTING OF CLAIMS

1. (Currently Amended) A process for preparing an aqueous dispersion of polymer particles comprising a polymeric composition having non-gelled polymer chains, said process comprising the steps of:

a) preparing an aqueous emulsion of hydrophobic monomer droplets, said droplets comprising:

- i) at least one C₈ to C₃₀ alkyl (meth)acrylate monomer,
- ii) at least one chain branching monomer, said chain branching monomer present in an amount not greater than 0.10 weight percent based on total weight of the C₈ to C₃₀ alkyl (meth)acrylate monomer, and
- iii) at least one emulsifier; and

b) polymerizing, by at least one technique selected from the group consisting of conventional emulsion polymerization, bulk polymerization and solution polymerization, said C₈ to C₃₀ alkyl (meth)acrylate monomer with said at least one chain branching monomer using at least one free radical initiator to form said aqueous dispersion of polymer particles comprising a polymeric composition having non-gelled polymer chains, ~~wherein said chain branching monomer results in the polymer particles comprising non-gelled polymer chains, and wherein said non-gelled polymer chains have polymeric composition has~~ a weight average molecular weight of at least 100,000 g/mol.

Claims 2-6. (Cancelled).

7. (Original) The process according to Claim 1, further comprising the step of reducing the amount of unpolymerized monomers using at least one of the following: t-alkyl hydroperoxide, t-alkyl peroxide, and t-alkyl perester, wherein the t-alkyl group includes at least 5 carbon atoms; and optionally at least one other oxidant.

8. (Original) The process according to Claim 1, wherein said aqueous emulsion of hydrophobic monomer droplets is prepared using high shear means to provide a mean droplet diameter of less than 30 microns.

9. (Currently Amended) The process according to Claim 1, wherein said aqueous emulsion of hydrophobic monomer droplets further comprises at least one ~~hydrophobic monomer-carrier~~ monomer transport aid.

10. (Currently Amended) The process according to any one of Claims 1 to and 7-9 and 11-16, further comprising at least one step to remove water from said aqueous dispersion of polymer particles, so that said polymer particles are in the form of at least one of the following: a wetcake, powder, tablet, pellet, bead, film, and extrudate.

11. (New) The process according to Claim 1, wherein said polymerizing step is performed to produce said polymer particles which comprise at least one soft phase, which comprises said polymeric composition having non-gelled polymer chains, and at least one hard phase, said at least one hard phase having a glass transition temperature of at least 25°C.

12. (New) The process according to Claim 11, wherein said at least one hard phase is selected from the group consisting of at least one hard polymer shell disposed externally to each of said polymer particles, a plurality of hard polymer particles, and combinations thereof.

13. (New) The process according to Claim 12, wherein said polymerizing step comprises forming by polymerization a plurality of soft polymer particles, comprising said polymeric composition having non-gelled polymer chains, as said at least one soft phase in said aqueous dispersion of polymer particles, and adding to said aqueous dispersion of polymer particles a plurality of hard polymer particles as said at least one hard phase.

14. (New) The process according to Claim 12, wherein said polymerizing step further comprises at least one technique selected from the group consisting of polymerization, multistaged polymerization and agglomeration, to form said polymer particles wherein each of said polymer particles comprises at least one core as said soft phase and at least one shell as said at least one hard phase.

15. (New) The process according to Claim 14, wherein said polymerizing step comprises multistaged polymerization wherein said C₈ to C₃₀ alkyl (meth)acrylate monomer are polymerized with said at least one chain branching monomer to form said at least one core of each of said polymer particles and at least one ethylenically unsaturated monomer is polymerized in the presence of said at least one core to form said at least one shell externally on each of said polymer particles.

16. (New) The process according to Claim 15, wherein said polymerizing step comprises polymerizing said C₈ to C₃₀ alkyl (meth)acrylate monomer with said at least one chain branching monomer to form said at least one core of each of said polymer particles, and polymerizing at least one ethylenically unsaturated monomer in the presence of said at least one core to form an inner polymer shell adjacent to each of said at least one core, forming a plurality of core-and-inner-shell-particles, and polymerizing at least one ethylenically unsaturated monomer in the presence of said plurality of core-and-inner-shell particles to form an outer polymer shell situated externally to said inner polymer shell of each of said particles, whereby said at least one shell comprises said inner polymer shell and said outer polymer shell, wherein said inner polymer shell is situated adjacent to said at least one core of each of said polymer particles, and said outer polymer shell is situated external to said inner polymer shell.